

WHAT IS CLAIMED IS:

1. A light emitting diode (LED) capable of emitting white light comprising:

a ZnTe substrate;

5 a BP buffer layer of single crystal on said ZnTe substrate;

a first type GaN cladding layer of cubic crystal on said BP buffer layer;

an active layer on said first type GaN cladding layer; and

a second type GaN cladding layer of cubic crystal on said active layer, wherein the conducting type of said second type GaN cladding layer is

10 opposite to said first type GaN cladding layer, said active layer emitting a first wavelength, said ZnTe substrate emitting a second wavelength by absorbing said first wavelength, such that the wavelength of said white light is produced by mixing said first wavelength and said second wavelength.

2. The LED capable of emitting white light according to claim 1, further comprising:

15 a first type electrode below said ZnTe substrate; and

a second type electrode on said second type GaN cladding layer and having opposite conducting type to said first type electrode.

3. The LED capable of emitting white light according to claim 1, wherein said ZnTe substrate, said BP buffer layer, said first type electrode and said first type GaN cladding layer are the same in conducting type.

4. The LED capable of emitting white light according to claim 3, wherein
5 said ZnTe substrate is N-type or P-type.

5. The LED capable of emitting white light according to claim 4, wherein said BP buffer layer may be P-type or N-type by respectively adjusting the P-Rich or B-Rich structures.

6. A light emitting diode (LED) capable of emitting white light
10 comprising:

a ZnSe substrate;

a BP buffer layer of single crystal on said ZnSe substrate;

a first type GaN cladding layer of cubic crystal on said BP buffer layer;

an active layer on said first type GaN cladding layer; and

15 a second type GaN cladding layer of cubic crystal on said active layer, wherein the conducting type of said second type GaN cladding layer is opposite to said first type GaN cladding layer, said active layer emitting a first wavelength, said ZnSe substrate emitting a second wavelength by absorbing said first wavelength, such that the wavelength of said white light being

produced by mixing said first wavelength and said second wavelength.

7. The LED capable of emitting white light according to claim 6, further comprising:

a first type electrode below said ZnSe substrate;

5 a second type electrode on said second type GaN cladding layer and having opposite conducting type to said first type electrode.

8. The LED capable of emitting white light according to claim 6, wherein said ZnSe substrate, said BP buffer layer, said first type electrode and said first type GaN cladding layer are the same in conducting type.

10 9. The LED capable of emitting white light according to claim 8, wherein said ZnSe substrate is N-type or P-type.

10. The LED capable of emitting white light according to claim 6, wherein said BP buffer layer may be P-type or N-type respectively by adjusting the P-Rich structure or the B-Rich structure.

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